The Social Life of Information

By John Seely Brown and Paul Duguid
Harvard Business School Press, 2000.

Reviewed by LTC Kenneth H. Rose (USA, Ret.), a Management Consultant in Hampton, VA, and former member of the Army Acquisition Corps (AAC).

Editor's Note: This book was chosen for review from the AAC reading list that appeared in the September-October 2000 issue of Army AL&T. The list was provided by LTG Paul J. Kern, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology and Director of the AAC.

Every now and then, a book comes along that can change the way you see the world and how you view the future. *The Social Life of Information* by John Seely Brown and Paul Duguid is a current example. The authors are neither naysayers nor evangelists, but rather self-described technology enthusiasts who seek to temper what could be overly optimistic predictions of technology-based change with consideration of non-technical forces that will also influence the application of technology to human needs.

The book comprises eight essays that address the social context of information from different perspectives. The essays stand alone and may be read independently or as a whole.

The authors begin with a caution about the infocentric view of technology's potential effects that often defines the world in terms of information. They describe "6-D vision" as a one-dimensional view that predicts the applica-tion of information technology will break down society into its fundamental components of individuals and information. This will cause the six "Ds" of disaggregation, demassification, decentralization, denationalization, despacialization, and disintermediation.

This view, rather than being one of greater clarity, is really one of social and moral blindness. It isolates information from the informational aspects of life and disregards everything else. It tends to take the most rapid point of change and extrapolate it grandly into the future without regard for peripheral forces that are coming together. Nuclear power is a good example. The optimistic predictions of the 1950s did not consider the rise of environmentalism or a few thorny technical problems.

Brown and Duguid tackle electronic autonomous agents, popularly known as "bots," that now roam or otherwise operate in just about every known computer domain. Optimism abounds about the abilities and roles of these bots in everything from simple ordering transactions to complex negotiations. Bots are assumed to learn as they go, but the authors advise that even if this were really possible, the bots would still lack the rich stimuli from which humans acquire judgment. Bots "live a wretchedly impoverished social existence." Simply put, human and digital domains are distinct; human planning, coordinating, decisionmaking, and negotiating are significantly different from automated information searches or following digital footsteps.

Information technology is supposed to be the key that will unlock the office gates and allow, even push, more people to work in their homes. Yet, office occupancy rates continue to rise. And home workers drift back to office environments, sometimes rather quickly. Offices provide not only essential social interactions, but also powerful learning environments that exploit incidental learning, not just that which is formally structured and delivered. Workers also soon discover that because a cooperative network is absent in the home, simple tasks become time-consuming burdens that spill into private and family life. A better approach may be to determine how technology can reinforce access to social networks and thereby enable people to work alone. But the real contribution of technology may not be to allow people to work separately, but to support people who work together and make their interactions more efficient and productive.

The authors contrast the role of *processes*, the usual targets of automation and re-engineering, with informal, improvisational *practices* that actually keep an organization going. They suggest that informal collaboration and narration are the keys to problem solving—not a technical road map that seeks impossibly to define all conditions and responses, but a rich, unstructured network that addresses novel situations. It is a matter of routine, standard processes and unpredictable, fuzzy practice. One should not be ignored in favor of the other; rather, the two should be combined to balance the formal and informal, the structured and spontaneous.

Learning and knowledge are gaining importance as differentiators of organization performance as technology duplication time decreases. According to Brown and Duguid, learning and knowledge in organizations require cultivation of knowledgeable works, and a tight information focus makes that difficult. Focusing on information, explicitly stated in documents and databases, ignores the central role of tacit knowledge that resides only inside workers' heads. The development, retention, and transfer of knowledge depend on the interactions of people in "communities of practice," not just adherence to prescribed processes.

The authors counter predictions of massive decentralization via the World Wide Web with descriptions of "networks of practice" and "clustered ecologies" that indicate regional technology clusters are not only alive and well, but also essential in creating a proximal critical mass of needs and skills. They also suggest that the predicted demise of the organization in favor of self-organizing entrepreneurs fails to recognize that formal organizations can also be extraordinarily productive. The two approaches are complementary and probably are here to stay as partners, not competitors.

Even the ubiquitous paper document, always on the soon-to-disappear list, gets a boost for longevity because it is a useful medium in a social context, not just a carrier of information. The practicalities of its predicted decline? A digitized library project in the United Kingdom (U.K.) is approaching 10,000 documents on file after 30 years of work; meanwhile, during 1999, 100,000 new documents appeared in print in the U.K. alone.

In their final essay, the authors take on education, perhaps a topic of special interest for the U.S. Army with its efforts in distance learning. They describe *enculturization*—interacting with communities of practice and concepts—and peer support as requirements for learning. Neither is met by a technology-driven information delivery approach. Technology

can overcome geographic distance, but social distance is a harder problem. And, currently, technology is focused on inter-actions across time, not space. The authors suggest a recon-figuration of educational constituencies and components that will adapt technical opportunities to basic goals and constraints.

Brown and Duguid close with a recapitulation of common threads that interweave throughout the book: resources and constraints, tunnel-vision focus on information, and institu-tional evolution.

Information is an increasingly important part of what peo-ple do. It is a building block. As such, it has little value until people extract raw material, shape it to fit some need, and then stack it together in an organized way to fit an intended pur-pose. To do that, *The Social Life of Information* offers a cogent discussion of principal issues that clarifies the roles of cooper-ating forces. It offers a holistic foundation for a practical under-standing of information technology potential and a more com-plete design for the future.

This book is available online from Harvard Business School Press at **http://www.hbsp.harvard.edu**.

NEWS BRIEFS

Army Enterprise Agreement Expanded

The Army and the Parametric Technology Corp. (PTC) recently concluded negotiations to expand the upgrade provision of the Army Enterprise Agreement for the Pro/E suite of engineering design automation software, DAAB07-99-A-H009, to include PTC's Flexible Engineering Package. This will enable Army Pro/E users to purchase another productivity-enhancing software tool at substantial dis-counts over its General Service Administration (GSA) sched-ule costs.

The Army Enterprise Agreement was negotiated in Sep-tember 1999 by the Product Manager, Small Computer Pro-gram (PM, SCP), Fort Monmouth, NJ, in response to an Army Materiel Command (AMC) directive. This directive resulted from an initiative to provide Army activities with a contract vehicle to acquire state-of-the-art software tools to employ simulation-based acquisition techniques to acceler-ate development and reduce the cost of new Army systems for the 21st century.

The Pro/E software is a premier computer-aided design/computer-aided manufacturing (CAD/CAM) pack-age used extensively by engineering personnel from the government, industry, and academia. Army users of the CAD/CAM package include personnel from AMC laborato-ries and research, development, and engineering centers; Army depots and ammunition activities; Army Corps of Engineers' laboratories; Army Test and Evaluation Com-mand activities; the National Ground Intelligence Center; and the Army Transportation and Engineering Agency.

Key provisions of the Army Enterprise Agreement for the Pro/E include the discounted purchase (5-15 percent off the GSA price) of an Army Pro/E Enterprise configuration, "a la carte" purchases of the components of the Enterprise configuration as well as other selected Pro/E modules/ extensions, and upgraded software. The Army Pro/E Enter-prise configuration consists of the Pro/E Foundation with the Advanced Assembly, Advanced Surface, and the Design Management (now called Pro/INTRALINK Workgroup Man-ager) extensions. The upgrade provision allows Army

Pro/E owners to upgrade their legacy licenses to the Army Enterprise Configuration for a nominal cost of $1,350 each.

The negotiated expanded provision allows for the upgrade of all Army-owned Pro/E license packages to PTC's newly released Flexible Engineering Package. In addition to the components of the above Army Enterprise configura-tion, this package includes PTC's Behavioral Modeling, Mechanical Design, and ModelCHECK extensions. The cost of this complete package for Army Pro/E owners is $2,000. However, those who have already upgraded their licenses to the Army Enterprise configuration may obtain this expanded package for $650.

The above provisions of the Enterprise Agreement are good through Dec. 17, 2002. All provisions are open for use by authorized Army support contractors as long as the soft-ware in question is installed, maintained, and used at fed-eral facilities to support Army programs.

PTC subject matter experts are planning a series of roadshows at key Army installations to demonstrate the capabilities of the Flexible Engineering Package.

The entire Army Enterprise Agreement for the Pro/E, including complete ordering instructions, is available on PM, SCP's Web site at **http://pmscp.monmouth.army.mil/ contracts/p-eds/p-eds.htm**.

For further information or to schedule a PTC roadshow at your site, contact Emmanuel Nidhiry, (703) 617-5809, e-mail **enidhiry@hqamc.army.mil**.

Yuma Dedicates New Mine-Detection Range

On Oct. 25, 2000, a specially designed state-of-the-art mine-detection range was dedicated at the U.S. Army Yuma Proving Ground. The new Department of Defense Desert Countermine Testing and Training Range will enable Army test professionals to fully examine the very newest mine-detection hardware in a realistic desert environment, officials said.

Located on the Kofa Firing Range, the new multimillion dollar facility covers 455 acres and is surrounded by a